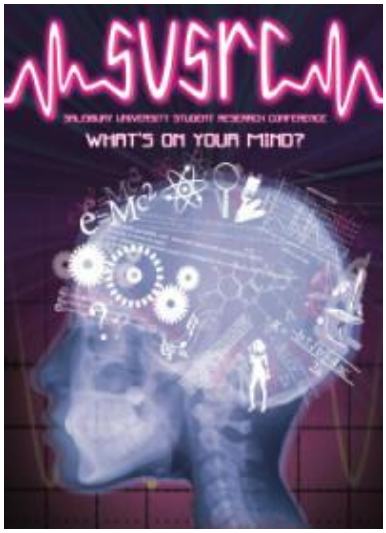
**PLEASE DO NOT PRINT THIS!**

# SU Biology Students Travel to Curacao

Photo of Becky Lang: "I felt so good when I could actually identify in the field what I had only ever seen in books." See page 9 for a full article.

## ANNOUNCEMENTS AND AWARDS

**Student Research Call for Submissions**




The ninth annual SU Student Research Conference (SUSRC) is 1-7:30 p.m. Friday, April 23, 2010. Students from all four of SU's academic schools are invited to submit their original work for consideration for presentations and poster sessions. The SUSRC celebrates student scholarship, artistic merit and professional achievement. Presentations are organized into themed sessions ranging from molecular biology to music composition, from education to economics. This year there is a new submission process involving three required steps. First, students must submit their intent by March 12. Second, the student's faculty mentor must approve the student's work. And third, students must submit final abstracts and faculty mentor nominations by midnight Thursday, April 1. The conference is free and the public is invited. For more information visit http://www.salisbury.edu/susrc.

**Crisalli Completes Prestigious Research Internship**

Mario Crisalli, a Salisbury University senior and Deans list student was among a select group of 33 interns hand-picked from nearly 300 applicants for The Jackson Laboratory's 2009 Summer Student Program.

The Jackson Laboratory is one of the world's leading biomedical research institutions. Now in its 85th year, the nationally renowned summer program, which boasts three Nobel laureates among its alumni, continues to attract the country's best and brightest college and high school students for a summer of biomedical research.

Working under the mentorship of Professor Derry Roopenian and postdoctoral associate Caroline McPhee, Mario conducted an independent research project investigating a possible pathway for systemic lupus erythematosus, the autoimmune disease commonly known as lupus.

Mario says he was motivated to study lupus because his first cousin has the disease. "When someone in your family has a medical problem, you just want to find something that can help," he says. "When I go into the lab, I think about her."

This article has been modified from the DeMatha News: http://www.dematha.org/index.aspx.

**The Maryland Grain Producers Utilization Board**

Drs Sam Geleta and Chris Briand have been approved for an $8142 grant to continue studying "Sweet Sorghum Grain and Biomass for Ethanol Variety Screening Trial on Delmarva". Their first year 2009, was also funded by MGPUB, and the outcome of the research is very promising.

**The Spring 2010 Biology Seminar Series:**

**February 18**, Ron Gutberlet, Aaron Hogue, and Jim Rapp (Salisbury University and Delmarva Low-Impact Tourism Experiences) will present "Atlas of Maryland Reptiles and Amphibians: Overview and Call for Volunteers"

**February 25,** Earl Greene (USGS) will speak about watershed hydrology. Joint seminar with Henson School. Hosted by Art Lembo.

**March 4,** Miguel Mitchell (Salisbury University) will present "Progress Toward a Non-antibiotic Treatment for Chronic *C. difficile* Diarrhea". Hosted by Seth Friese.

**March 11**, Bradley Stevens (University of Maryland Eastern Shore). Hosted by Gene Williams

**March 25**, Jonah Choiniere (George Washington University) will present "*Long* Summers in China: Insights into Theropod Evolution from the Jurassic of Xinjiang". Hosted by Kim Hunter.

**April 15**, Tom Jones (Salisbury University) will present "A Ten Year Comparison of Water Quality in Three Eastern Shore Rivers". Hosted by Judith Stribling.

## UPCOMING EVENTS

**SU's Biology Department has started a Relay for Life team – "Beatles"**
Our team will camp out overnight and take turns walking around the track to raise money and awareness to help the American Cancer Society save more lives from cancer. Please join Dr. Dana Price and many others of the Salisbury community. Students, faculty, friends and family are all welcome! The event will be held April 30, 2010 at the Salisbury University Intramural Fields. 6:00 PM to 6:00 AM!
http://main.acsevents.org/site/TR?pg=team&fr_id=24366&team_id=577584

**Dr. Lawler's** watercolor paintings of birds will be featured in the Foyer Gallery of Salisbury's Art Institute and Gallery from March 19 through April 9.

The opening reception will be Friday, March 19, from 5 - 7 PM

It is free and everyone is invited!

**Events listed by PANORAMA, A Cultural Events Publication of SU**

**Ward Museum**

- **The Bronze Sculpture of Paul Rhymer --** January 29-March 28
  This is a showcase of select bronzes by Rhymer, a multiple Ward World Champion, whose pieces have been featured in exhibitions including the Society of Animal Artists' Art and the Animal and the Leigh Yawkey Woodson Museum's Birds in Art.

- **Student Art Show; Art & the Animal --** February 12-March 14
  Reception: Friday, February 12, 5-7 p.m. Welcome Gallery
  Features art from public, private and home school children. Participation is free.

- **Forty Years of Art, Nature & Tradition; The Ward World Championship Retrospective**
  April 2-May 9: A retrospective of Ward World Champion decoys, decorative carvings and sculpture. See how techniques and trends in wildfowl carving have evolved over the years. Admission is free during the Ward World Championship, April 23-25.

- **Art & the Animal** -- May 14-July 18
  Reception: Friday, May 14, 5-7 p.m. LaMay Gallery
  This 49th annual exhibition organized by the Society of Animal Artists showcases animal art in a variety of media.

**Blackwater Eagle Festival -- March 13, Time: 8:00 am**

Blackwater National Wildlife Refuge
A family festival celebrating birds of prey.
**Contact Information:** 410-228-2677; **Website:** http://www.tourdorchester.org

***e*$^2$ energy Film Series -- March 22 – April 5**

*e*$^2$ is a critically acclaimed multipart PBS series about those who envision a better quality of life on Earth: socially, culturally, economically, and ecologically. The series explores attainable solutions to pressing environmental and social challenges, and its stories are culled from a variety of fields.
**Holloway Hall, Great Hall, 7p.m.**

- Harvesting the Wind & Energy for a developing World – Monday March 22
- Paving the Way & Growing Energy – Monday March 29
- State of Resolve & Coal or Nuclear: Problem or Solution – Monday April 5

**Children's & Young Adult Literature Festival -- April 8 – 10**

The annual festival draws teachers, students, and community members to celebrate books, authors and illustrators who inspire great reading for children and young adults. Two themes share the stage this year: "Inspiring the Reluctant Reader" and "Literature and Environmental Stewardship." Events commence Thursday, April 8, in the Holloway Hall's Great Hall.
**Green Earth Book Awards** Jointly sponsored by SU and the Newton Marasco Foundation, the GEBA are bestowed upon selected authors and illustrators whose books contribute to environmental awareness and stewardship for children and young adults. Awards are given in the categories "Children's Fiction," "Picturebooks," "Nonfiction" and "Young Adult Fiction." The GEBA recipients are recognized during the Children's Literature Festival.

**Recycle 2010 Exhibit – Commons Comma Gallery (near SU Book store) -- April 18 – 24**

View examples of Recycled art works, including recycled telephone-wire baskets from Africa, bowls presented from vintage record albums and san cast beads made from glass bottles.

**Going Green Earth Day Lunch -- Commons Bistro -- April 22**

**Ward World Championship Wildfowl Carving Competition & Art Festival -- April 23-25**

**Roland E. Powell Convention Center, Ocean City, MD**
**Friday 10 a.m.-5 p.m.; Saturday 9 a.m.-5 p.m.; Sunday 10 a.m.-4 p.m.**
Come celebrate the 40th anniversary of the best of the best in wildfowl art at the largest and most prestigious carving competition in the world. Attracting carvers from across the world, artists compete in carving categories such as life-size, miniature and interpretive. Over 1,500 carvings are entered, representing all levels of skill from Youth to World Class, as carvers compete for over $70,000 in prizes. Tickets to the World Championships can be purchased at the door or by contacting the Ocean City Convention Center at 1-800-OC-OCEAN or 410-289-8311.
**For more information visit http://www.wardmuseum.org.**

## OPPORTUNITIES

**Oak Ridge Institute for Science and Education**
Summer Student Research Program at the National Center for Toxicological Research
E-mail: sherry.foster@orau.gov
http://see.orau.org/ProgramDescription.aspx?Program=10137
The sponsor provides graduate and undergraduate students opportunities to participate in research on biological effects of potentially toxic chemicals and solutions to toxicology problems that have a major impact on human health and the environment.
Deadline: 03/12/2010
Link to full program description: http://www.infoed.org/new_spin/spin_prog.asp?07409

**Oak Ridge Institute for Science and Education**
Research Participation at the Federal Bureau of Investigation
E-mail: betty.bowling@orau.gov
http://see.orau.org/ProgramDescription.aspx?Program=10063
The sponsor provides opportunities to participate in advancement of forensic science, social and behavioral sciences, chemical and toxicology sciences at the FBI Academy in Quantico, Virginia. Awards have a duration of ten weeks to one year. Applications are accepted on a year-round basis.
Link to full program description: http://www.infoed.org/new_spin/spin_prog.asp?70302

**Texas Commission on Environmental Quality**
Mickey Leland Environmental Internship Program
http://www.tceq.state.tx.us/admin_folder/employ/mickeyleland/index.html#intern
The program provides summer internship opportunities for minorities, women, and economically disadvantaged students pursuing environmental, engineering, science-related, and public administration careers at colleges and universities across the United States.
Deadline: 03/31/2010
Link to full program description: http://www.infoed.org/new_spin/spin_prog.asp?74073

**Brookhaven National Laboratory**
Science and Engineering Programs for Women and Minorities
E-mail: palmore@bnl.gov
http://www.bnl.gov/diversity/programs.asp#Science_and_Engineering
Undergraduate women and minority students are employed for ten to twelve weeks during the summer. This on-the-job training program is a paid position.
Deadline: 04/30/2010
Link to full program description: http://www.infoed.org/new_spin/spin_prog.asp?09960

**Internships at the Ward Museum**
The Ward Museum Education Department seeks students interested in the fields of environmental studies and environmental education. A qualifying intern has a background in education, biology, and environmental science. Internships are available throughout the fall, spring and summer semesters. Dates are flexible (Year round). Hours are flexible with a regular commitment of 5-20 hours per week. To apply, interested students request an internship application by email WardEducation@salisbury.edu

# The Davenport-Hopkins Scholarship

The Davenport-Hopkins Scholarship, available to biology majors, is in memory of Dhimitra S. Davenport-Hopkins, a 1975 graduate in Biology. This award honors Dhimitra's love of biology and her enthusiasm for sharing her broad range of interests and knowledge with her students. **The scholarship is $2000.**

Recipients of this award must be a biology major of at least sophomore standing, with a minimum GPA of 2.8, active in undergraduate research, and recommended by a faculty member. Preference will be given to students with demonstrated financial need.

**The application deadline for the scholarship is Friday, March 12, 2010.**

Graduating seniors (May 2010) are not eligible for this award. The application packet must include: 1) an essay addressing your goals as a biologist, and 2) a letter of recommendation from a Biology faculty member.

**Requirements:**

1. Biology Major
2. Sophomore standing (completed at least 30 credits)
3. Completion of Biology 210 and Chemistry 121
4. Active in undergraduate research
5. Financial need

Please bring your completed application packet (essay letter of recommendation) to Sandy Ramses in the Biology office (HS 230 F). Forward questions to Dr. Kimberly Hunter, kxhunter@salisbury.edu

## FEATURED FACULTY
## DR. RON GUTBERLET

**Courses Taught at SU:** Fundamentals of Biology (Biol 101), Biology Concepts and Methods (Biol 210), Ornithology (Biol 405), Senior Seminar (Biol 418), Readings in Biology (Biol 420), Research in Biology (Biol 415)

**Courses Taught before coming to SU:** Introductory Biology, Vertebrate Natural History, Comparative Vertebrate Biology, Herpetology, Phylogenetic Systematics.

**Research Interests**

My research has mainly focused on the natural history of reptiles and amphibians, with special attention to their geographic distribution, classification, and evolution. My collaborators and I have used comparative morphology and comparative genomics to study phylogeny, phylogeography, and systematics of snakes and lizards. We have explored tropical regions in Africa and South America to document distribution patterns and also to search for undescribed species of reptiles and amphibians. This work has resulted in the description of 4 new species (3 lizards, 1 snake) and 2 new genera of snakes. We have even done a little work on turtle ecology in the Sabine River in Texas. Currently Patrick Masterson and I are looking at the evolution of head scale patterns within vipers, and Scott Claggett and I have discussed a plan to do similar work with lizards.

I also pursue my strong interest in the diversity and geographic distribution of birds by working on a variety of citizen science projects designed to document status and distribution of birds in our area. Daniel Denmark and I are analyzing historical records from citizen science databases to study the decline of the Loggerhead Shrike (*Lanius ludovicianus*) in the mid-Atlantic region, and Rick Walls recently studied the fall diet of Mourning Doves (*Zenaida macroura*) in Maryland and Delaware.

**Citizen Science**
Citizen science projects combine opportunities for teaching, research, and service into single, purpose-driven activities. I have been a long-term participant in National Audubon's Christmas Bird Count, but since coming to SU I have worked on 6 additional citizen science projects and have initiated two of my own.

Two large projects currently underway are the Delaware Breeding Bird Atlas (DBBA) and the Maryland Amphibian and Reptile Atlas (MARA). Each of these is a five-year project to assess and document the current status of these animals throughout the respective states. I am responsible for surveying two blocks for the DBBA, and five students have helped with this project so far. Dr. Hogue and I are the coordinators for Wicomico County for MARA—it is our job to recruit and manage volunteers to ensure that our county is surveyed thoroughly over the next five years. Please let us know if you'd like to help!

The Delmarva Peninsula is on the Atlantic Flyway and experiences a major migration of birds each spring and fall. Students, fellow faculty, community members, and I conduct weekly bird surveys during the spring and fall semesters and enter our records into eBird (www.ebird.org), a database maintained by National Audubon and the Cornell Laboratory of Ornithology.

I am always looking for interested volunteers to participate in these projects. Please stop by my office (HS 232) or send me an email (rlgutberlet@salisbury.edu) if you are interested—there are opportunities to help infrequently or often, and no experience is required.

**Recent Publications**
R.C. Jadin, R.L. Gutberlet, Jr., and E.N. Smith. 2010. Phylogeny, evolutionary morphology, and hemipenis descriptions of the Middle American jumping pitvipers (Serpentes: Crotalinae: *Atropoides*). Journal of Zoological Systematics and Evolutionary Research.

Fenwick, A.M., R.L. Gutberlet, Jr., J.A. Evans, and C.L. Parkinson. 2009. Morphological and molecular evidence for phylogeny and classification of South American pitvipers, genera *Bothrops, Bothriopsis*, and *Bothrocophias* (Serpentes: Viperidae). Zoological Journal of the Linnean Society 156:617–640.

J.L. Coleman and R.L. Gutberlet, Jr. 2008. Seasonal variation in basking in two syntopic species of map turtles (Emydidae: *Graptemys*). Chelonian Conservation and Biology 7:276–281.

# SU Biology Students Travel to Curacao


**Left to Right (standing):** Rick Highers, Kristin Brannock, Emily Solak, Laura Hundy, Megan Fischbach, Ally Clyde, Jennifer Scott, Becky Lang, Carlene Avalone, Mark Vermeij (CARMABI), Ryan Protzko, Caitlin Sauers; **Left to Right (front):** Joan Maloof (faculty), Michelle Meininger, Ann Barse (faculty).

This was the 10th year for the Coral Reef Biology class (BIOL399), the first and longest running Study Abroad course in the Henson School. Planning for the course starts a year in advance and Dr. Joan Maloof and Dr. Ann Barse teach it alternately. Dr. Maloof was scheduled to teach the course this year. Every year the class returns to Roatan, Honduras, where the healthy reef and fine classroom and lodging facilities combine to create a predictable and positive learning experience. The reservations were made, the students had applied and were accepted; but just a few months before departure there was a coup and political unrest in Honduras. The U.S. State Department issued an advisory against unnecessary travel. The choice was to cancel the class or find a new location. After much research, Dr. Maloof selected the Caribbean Marine Biological Institute (CARMABI) in Curacao, Netherlands Antilles. The institute is visited by approximately 70 scientists a year for research purposes. We were hosted by Dr. Marc Vermeij, the Science Director of CARMABI, and Institute Director Adolphe Debrot. The students all agreed to the change and Dr. Barse offered to come along to assist Dr. Maloof in the new location.

We cannot thank Dr. Maloof enough for her dedication to this course. Despite the last minute change in travel plans, we had a wonderfully arranged trip and both instructors and students were flexible enough to adapt to changes in the daily schedule. In fact, some of our most memorable adventures during our week were the ones we hadn't exactly planned in advance. This was especially true of the island tour we were lucky enough to receive from our host, Marc. He led us to more remote parts of the island, across plains of red desert sand and into caves of fossilized coral carved out by rainwater's erosive forces. It may seem strange that we took a drive through the

desert while on a trip focused on coral reef biology, but in fact this drive was essential to our understanding of how islands and reefs form. The island of Curacao began as two islands pushed up above the waves by local volcanic activity. Fringing coral reefs then formed around these two islands until they connected the two into one land mass. As we rode across the red sand, we could see layers of coral reef which had stacked on top of each other as sea level changed. This is what gives the island its shape, which Marc thinks resembles a pair of sunglasses; I think it looks more like a pair of angel wings.

Photo of Carlene Avalone: "One of the most interesting parts of the trip was our tour of a bat cave carved by rainfall through fossilized coral."

Of course, the majority of our time was spent underwater. The course is structured so that a SCUBA license is not required, but students who are certified are able to dive. There were four student divers on the trip, and the other eight students snorkeled. There were plenty of fish, corals, and other creatures to be seen by both the snorkeling and diving groups. It became clear just within the first few minutes underwater that it was going to be tough to keep up with the species lists we needed to fill out. Outrageously colored parrotfish; curious damselfish; oddly shaped trumpetfish; camouflaged scorpionfish; secretive eels; these are just a few of the fish species we encountered. There were also octopi, squid, sea turtles, Christmastree worms, and of course a beautiful variety of hard and soft corals.

Photo of Dr. Maloof: Preparing to snorkel in the mangroves.

When we weren't on snorkeling, diving, or desert-driving adventures, we were back at CARMABI, busily working on our species lists at the handy picnic tables or enjoying the beach just a few steps away from our rooms. Our stay was much enhanced by the wonderful people of CARMABI. Lunch and dinner were prepared for us every day, and we learned so much about the local creatures and culture from everyone we met. Especially impressive were the lectures given by Marc and Adolphe. We learned complex but beautiful concepts about coral reef ecology from Marc and interesting cultural and historical details from Adolphe. Snorkeling during our downtime was always an option because we were two steps from the water, and evenings were spent enjoying the Caribbean air at the picnic tables or at Hook's Hut, a restaurant just down the beach. The dive masters from the dive shop at Hook's were so friendly and helpful, joking around with us and leading us on fantastic underwater tours of the reefs at several different spots on the island.

We packed so much fun and activity into just one week; I felt like every day was a whole week in itself. We swam with dolphins one day, took a crazy pick-up truck tour through a cactus-filled national park on another--activities like these, combined with the perfect Caribbean weather, made it impossible to have a bad day. I'm so grateful to have been a part of this trip, and I'm sure the other eleven students agree. Coral reefs are truly magnificent and ecologically invaluable ecosystems and we're very lucky to have seen them firsthand. Dr. Maloof commented that she "was so very proud of our SU students! Every one of the twelve students was serious about the learning experience, kind to one another, and cooperative. It was thrilling to experience a new habitat together." I definitely agree: the trip couldn't have been better, and the fact that we were all experiencing the island for the first time made it even more fun. Thanks once again to Dr. Maloof for her determination in finding a new place for us, and to Dr. Barse for her help in making the trip go smoothly. My only regret was that we couldn't stay longer! The word isn't out yet on whether the course will return to Curacao next year or go back to Honduras, but in any case, the journey will be well worth it.

**Submitted by Carlene Avalone**
**Team Curacao 2010**

## LONZA

The Fall 2009 Invertebrate Zoology students visited Lonza, a laboratory in Salisbury where blood from horseshoe crabs is collected for use in the medical industry. We observed the crabs, which had been collected by fishers licensed by Maryland DNR, being bled out in the lab under sterile conditions (hence, the outfits). This blue blood is then prepared as Limulus Amebocyte Lysate (LAL), the primary test available to detect endotoxin in pharmaceutical preparations, e.g., intravenous drugs and fluids, replacement joints, and stents**. Pictured below from Left to Right:** Mara Sterling, Dr. Ann Barse, Bern Gross, Eddy Newton, and Shandi Hiebler.

## MEETINGS/ PRESENTATIONS/ TRAVEL

Dr. Ellen Lawler will be attending the 2010 Conference of the American Society for Environmental History in Portland, Oregon in March and will present a poster, "Observations on Natural History by Eighteenth Century Maryland Merchant, Henry Callister". SU biomajors Sarah A. Rubin and Brittney L. Uhland are co-authors of the poster.

Dr. Ryan Taylor's research students, Kelsey Mitchell and Samantha Aylor traveled to Colorado State University in January to learn how to section brain tissue on a cryostat. They successfully sectioned 39 full frog brains which are now going to be used to study functional areas of the brain that are involved in processing male courtship signals.

Drs Briand and Geleta attended the Sweet Sorghum Ethanol Association meeting in Orlando, Florida this January 2010. During the conference they participated in the panel discussion.

## PUBLICATION/ARTICLES/ABSTRACTS
## (*Undergraduate, **Masters Student, ***Emeritus)

Spinelli, G.R., *****W.L. Grogan, Jr.** and M.M. Ronderos. 2009. A revision of the Patagonian predaceous midges of the genus *Palpomyia* Meigen (Diptera: Ceratopogonidae). Insect Systematics and Evolution 40:43-70.

Borkent, A., G.R. Spinelli and *****W.L. Grogan.** 2009. Chapter 29. Ceratopogonidae (Biting midges, Purrujas). pp. 407-435 In: Brown, B. V. et al., eds., Manual of Central American Diptera. Vol. 1. NRC Research Press, Ottawa, Ontario, Canada. 714 pp.

*****Grogan, W.L., Jr.**, R.A. Saumure, J. MacEachern, L. Allen and M.D. Pulsifer. 2009. Natural History Notes. *Glyptemys insculpta* (Wood Turtle). Ectoparasites. Herpetological Review 40:333-334.

**Thank you to Dr. Ron Gutberlet for editing this material. His work is much appreciated.**

**If you have announcements to add or general comments regarding the Newsletter, please contact Dr. Dana Price: dlprice@salisbury.edu**
**Your opinion matters!**